

Date: Tue, 8 Mar 94 04:30:14 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #58
To: Ham-Ant

Ham-Ant Digest Tue, 8 Mar 94 Volume 94 : Issue 58

Today's Topics:

Battle Creek Special
Design of Cubical Quad
Dipole or Vertical for DX?
MFJ SWR Analyzers
R5 info/part needed
Radials for rooftop antenna
Simple Signal Question
Slim-jim dimensions?
test
ZL Special on 6m verse Yagi

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

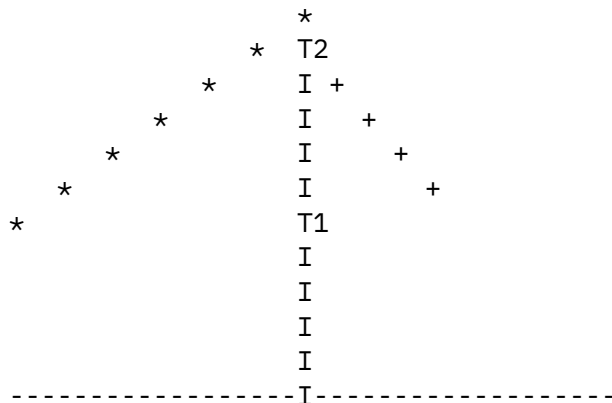
We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 7 Mar 1994 10:06:24 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!EU.net!news.funet.fi!
news.cc.tut.fi!news.cs.tut.fi!jps@network.ucsd.edu
Subject: Battle Creek Special
To: ham-ant@ucsd.edu

In article <2l5h88\$15g@charm.magnus.acs.ohio-state.edu> Bob_Dixon@osu.edu writes:
>What is the Battle Creek Special antenna that was used by the recent 3Y operation
>on the low bands?

BCS is vertical antenna for 40,80 and 160 meters.
It is abt 15m:s high. Bands are separated by traps.
It is full 1/4-wavelength for 40m. there is two wires on the top to make

80 and 160 also ok.



```
=====
= ground
I vertical part
T1 trap for 40
T2 trap for 80
+ lengthening wire for 80
* -----ii----- 160
- radials
```

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>
>
> Bob W8ERD
>
Jukka OH3NLP
```

```
--
** Jukka Salonen OH3NLP * E-mail: jps@cs.tut.fi *****
** Addr: Sorva *****
***** 37120 Nokia ***** Too old to Rock and Roll, too young to die.***
***** Finland *****
```

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Date: 7 Mar 1994 18:02:03 GMT
From: ihnp4.ucsd.edu!agate!usenet.ins.cwru.edu!news1.hh.ab.com!icd.ab.com!
bjp@network.ucsd.edu
Subject: Design of Cubical Quad
To: ham-ant@ucsd.edu
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quad designs in William Orr book "All about cubical quad antennas"?

- 1) What is the bandwidth of the design? 2:1? 1.5:1?
- 2) Has anyone model the design? NEC wire 1.0?
- 3) What is the true Front to Back ratio and Gain?
- 4) Are the elements length correct?

Brian (N8RPA)

In article <1994Mar1.202545.1@ntuvax.ntu.ac.sg>, <asirene@ntuvax.ntu.ac.sg> wrote:

 \succ

```
> This is on 20 meters.
```

 \succ

>

Scott NF3I

73, \ / Long Original The

Scott Rosenfeld Amateur Radio NF3I Burtonsville, MD | Live \$5.00
WAC-CW/SSB WAS DXCC - 125 QSLed on dipoles _____| Dipoles! Antenna!

Date: 4 Mar 94 06:26:11 GMT
From: agate!howland.reston.ans.net!torn!nott!uotcsi2!hassan@ucbvax.berkeley.edu
Subject: MFJ SWR Analyzers
To: ham-ant@ucsd.edu

Henry B. Smith (henrys@netcom.com) wrote:
: Is anybody familiar with either the MFJ-249 or MFJ-259 SWR analyzers?
: Can the MFJ-259 really measure feed-point resistance when it is
: inserted at the equipment end of the coax?

: A general question: Can you dependably determine the resonance of an
: antenna by looking for the lowest SWR?

I'm familiar to neither but I can tell you that you can't determine the feed point resistance using SWR information only. With SWR you can only determine the magnitude of the reflection coefficient. If you wish to determine the feed-point resistance, you also need to have the phase of the reflection coefficient at the feed point. One of the ways of knowing the phase is through determining the position of the first voltage minimum. I don't know if the above analyzers can provide that. If they do, you can always find the relationship between the position of the first voltage minimum with the reflection coefficient phase from many antenna books.

As to your second question, the answer is generally Yes! But be careful, the resonance is also dependent on the reactance (in fact capacitance) resulting from the junction between the antenna and the coax. With different junctions you have different capacitances and hence the resonance shifts even if the antenna is the same. Examples of what makes different junctions is different coaxial lines, different coax connectors etc

Hassan <<hassan@aix1.uottawa.ca>>

Date: 7 Mar 1994 12:09:24 -0500
From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!swrinde!emory!news-feed-1.peachnet.edu!concert!borg.cs.unc.edu!not-for-mail@network.ucsd.edu
Subject: R5 info/part needed
To: ham-ant@ucsd.edu

A local fellow bought a used Cushcraft R5 at a hamfest but didn't realize until too late that the box didn't include the "MN-1 matching network". Does anyone possibly have one of these for sale (Cushcraft wants \$116) or have info on what it is and what to substitute or how to make one ??? Any reference to a magazine article on the R5 would be appreciated.

thanks,
Nick KD4CPL
nick@cs.unc.edu

Date: 4 Mar 94 13:44:59 GMT
From: agate!howland.reston.ans.net!cs.utexas.edu!gerald@cc.utexas.edu!
slip-2-27.ots.utexas.edu!johnz@ucbvax.berkeley.edu
Subject: Radials for rooftop antenna
To: ham-ant@ucsd.edu

I have a Cushcraft AV3 and want to mount it on my roof. I am not sure what to do for radials. Cushcraft sells a radial kit which consists of 9 radials some single some multiple wires. It would seem possible to use 12 wires, 4 for each band covered. Could I get by with having 4 groups of 3 wires each cut to 1/4 wave length, running together, 3 to a group? Also what angle do they need to slope down? This antenna was a hamfest special and I have no instructions as to mounting, tuning etc. Any advise will be appreciated.

Date: 4 Mar 94 06:20:11 GMT
From: agate!howland.reston.ans.net!noc.near.net!news.delphi.com!BIX.com!
hamilton@ucbvax.berkeley.edu
Subject: Simple Signal Question
To: ham-ant@ucsd.edu

In article <2kk57u\$rt9@sugar.NeoSoft.COM>, dlc@sugar.NeoSoft.COM (Dane L. Cantwell) wrote:

> A friend and I were talking about cellular phones. He is in the market
> for one and we were talking about the merits of a "full size" phone at 3
> watts versus a portable at 0.6 watts. It was my point that the extra
> transmission power is discounted because the signal received at tower is
> related to the square of the distance to the tower.... therefore you
> don't get anything like 5 times the range with a 3 watt model over a 0.6
> watt unit. Is this right in theory? How about the real world?

I have a handheld OKI 1150, one of the smaller units on the market. I would never trade it for a car phone or bag phone or whatever. Convenience is everything with a cellular phone. The handheld unit

can be slipped in a back pocket or a coat pocket and goes with you anywhere.

If you're married, you can probably identify with this: my wife is forever sending me to the store for things that don't exist. She'll tell me to get the 12oz can in the red label. When I get to the store, they'll have 8oz and 16oz cans in blue and green labels. No 12oz red. And no matter what I choose, it's going to be wrong. No problem: I just phone her standing right there in the aisle. (I have a cellular plan up here near Boston that makes off-peak calls like this free.)

If we go out for the evening, we give the sitter my cellular number. No worrying about where exactly we'll go or anything like that.

Unless you really, really are convinced you're going make all your calls from your car, where, okay, the speakerphone, etc., are useful, you're really nuts to get anything but a handheld.

Re: signal quality, frankly, it's been my experience that if you're in a good area, it's good, and if you're not in a good area, it's not good. There's precious little difference (as in, I sure can't tell any) between what you'll hear with a good handheld vs. a regular carphone. My OKI works perfectly fine, for example, in the car while I'm driving unless I'm out in a fringe area where nothing would work anyway.

Regards,

Doug Hamilton hamilton@bix.com Ph 508-358-5715
Hamilton Laboratories, 13 Old Farm Road, Wayland, MA 01778-3117

Date: Sat, 5 Mar 1994 20:57:25 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!pipex!uknet!brunel!
news@network.ucsd.edu
Subject: Slim-jim dimensions?
To: ham-ant@ucsd.edu

Hi,

I'm looking for the formulae required to produce a slim-jim. Specifically, I'm interested in using a slim jim as an antenna for a broadcast FM receiver using open-wire feeder for the antenna.

Any help would be appreciated.

73 Nick, G7ENS

Date: Mon, 7 Mar 1994 22:47:25 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!oakhill!victorc@network.ucsd.edu
Subject: test
To: ham-ant@ucsd.edu

testing

Date: Mon, 7 Mar 1994 17:47:21 +0000
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!howland.reston.ans.net!pipex!demon!
vetinfo.demon.co.uk!Peter@network.ucsd.edu
Subject: ZL Special on 6m verse Yagi
To: ham-ant@ucsd.edu

Hi folks,

Have you used a ZL Special on 6m, I am thinking of building one to replace my 4 Element Wide Space Yagi that I am currently using.

Now the F2 prop has gone, but not forgotten, I feel now is the time to experiment with beams on 50Mhz, as conditions should be a little more stable.

So I think I read somewhere that the ZL Special beams have better gain and F/B ratio than a yagi with the same number of elements, and also has a shorter boom length, is this correct?

Also I am unable at the moment to have the beam up above 30ft, and I believe that the ZL Special design will work well at this hieght.

I have had a design for a 5 element ZL Special given to me, but would be interested in other's espec. the 7 element version.

I also beleive that the ZL Special will be a lot broader banded than the current 4 Element Wide Space. which would be pref. as I wish to continue experimenting with RTTY on 6m, but the fqy is 50.600 and a little to high for my existing beam.

I look forward to reading your comments.

CUL

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Peter J Carr
Internet Mail Address : Peter@vetinfo.demon.co.uk
Packet Radio Address : G7ETZ@GB7IMB

Date: 7 Mar 1994 13:56:47 -0600
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!convex!news.utdallas.edu!corpgate!
crchh327.bnr.ca!debaker@network.ucsd.edu
To: ham-ant@ucsd.edu

References <CLzEpK.EGL@eskimo.com>, <1994Mar3.170330.27389@nosc.mil>,
<CM5sFy.Hx1@cup.hp.com>
Subject : Re: AEA ISOLLOOP

In article <CM5sFy.Hx1@cup.hp.com>, genem@cup.hp.com (Gene Marshall) writes:
|> : While the antenna was fine, we were : having no fun trying to get the
|> thing to tune using that awful set of : controls.
|>
|> Just curious: has anyone out there invested in or used the new
|> controller? You know, the one that's the same price as the antenna?

I recently picked up a used ISOLLOOP with IT-1, which also included the manual tuner. Let me tell you, the IT-1 is AWESOME. It makes tuning the loop as easy as possible. It lets you enter a freq in 1 MHz increments from 10 to 30, it will auto-tune using either background noise or SWR measurements, and it will quickly fine tune itself using either of the above methods at any time by pressing a couple of buttons. It also has about 9 memories for storing the settings for your favorite freqs. It is even smart enough that it always tunes from the same direction internally, so that the butterfly capacitor is always properly aligned (no worry about backlash in the gear). Oh, one last thing, you can tune from 10 to 30, and be ready to transmit in less than 5 seconds total. Not bad, but for around \$600 total retail, it better do something! Sorry, I only paid \$250 for both pieces...but this is definately a good option if you have limited space. I also have a 40M dipole in a U shape, at about the same height (20ft above ground, in attic), and the ISOLLOOP usually beats the dipole by 2 to 4 S units in the 10-30 MHz range. One note though: You will still need a long wire or something similiar to scan on. It is a little tricky to re-tune the loop as you turn the dial...although I have become quite skillfull at doing this...

Hope these comments help. Although expensive, this product WORKS. A friend of mine has the MFJ version. Is is similiar, and much less expensive, but tunes much slower, and is lower quality. Some folks have reported that the tuner on the MFJ exposes the operator to RF in the shack, since it uses the coax as the motor controller too. MFJ Super High-Q loop is decent for the price, but my friend with the 1786 wishes he had an ISOLLOOP. Also, on a technical note: the ISOLLOOP uses totally inductive coupling, i.e. the 'loop' itself, including the outside halves of the tuning cap. are completely

electrically separate from the rest of the antenna. The feedline is coupled to the loop using a faraday coupling loop, which is simply a short at DC (inner conductor connected to shield of coax. The MFJ is different in that the shield of the COAX is connected to the 'loop' of the loop, and the center conductor is coupled inductively for transmitting. They accomplish the same thing, but do it in slightly different ways. Both designs are very interesting.

Have fun.

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|>
|> Thanks,
|> Gene
|> --
|> +-----+
|> |Gene Marshall          \- \- \          email: genem@cup.hp.com | |
|> |Hewlett Packard Co., MS 42UN          |          Tel: 408/447-5282 |
|> |Software Svcs & Tech. Division (SST) | ___o          Fax: 408/447-5039 |
|> |11000 Wolfe Road          L^\<._          AA6IY@N6LDL.CA.USA.NA |
|> |Cupertino, CA 95014          (_)/ (_)          CompuServe: 75060,260 |
|> +-----+
```

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|-----|
| David E. Baker | Internet: debaker@bnr.ca (Richardson, TX, USA) |
| IP: 47.122.65.7 | UnixID: crchh7b0 | Bell-Northern Research, Inc. |
| Callsign: AB5PI | Packet: AB5PI@N5AUX.#DFW.TX.USA.NA | Smile! ;-)|
| My opinions do not necessarily reflect the opinions of my employer |
|-----|
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End of Ham-Ant Digest V94 #58

